

Title: Legacy Modernization Artifact Checklist



LM Stage	Phase	Artifact	Artifact Purpose	Tips for Creating Artifact
<p>NOTE: When developing your agency's Legacy Modernization artifacts, choose a level of detail (i.e., Level 0, 1, 2, or 3) based on the context, the audience, the purpose, and the architect's or designer's own experience. Similarly, your decision to include an artifact from this checklist in your modernization strategy will depend on the value you believe the artifact will add to the quality and overall success of your modernization project. Some artifacts are labeled with an asterisk (*) and are color shaded to indicate that DIR highly recommends creating and including the artifact, at least as a Level-0 artifact, in your Modernization Due Diligence documentation.</p>				
<p>INITIATE</p>		<p>Role & Responsibility Matrix*</p>	<p>Defines the roles that will be needed to conduct the Legacy Modernization Due Diligence stage and identifies the people who will be serving in each of the roles. Include in LM Charter.</p>	<p>A comprehensive list of sample roles is included in Section 6.1 of the LM Guide. An agency can tailor the roles according to the agency's existing organizational structure. At minimum, include and assign the lead role of "Modernization Planning Manager" to your Modernization Core Team.</p>
		<p>RACI Chart*</p>	<p>Defines the level of involvement and communications expectations by roles. Include in LM Charter.</p>	<p>Sample RACI charts are shown in Sections 3.2.4 and 5.2.4 of the LM Guide. Your RACI Chart should include all the roles you define in your Responsibility Matrix, plus any additional stakeholders that will need to be consulted or kept informed.</p>
		<p>Legacy Modernization Charter*</p>	<p>Outlines Vision & Goals for the Modernization, and the Scope of the Due Diligence and the Planning & Funding stages.</p>	<p>Refer to Section 3.2 Legacy Modernization Charter within the LM Guide for the elements that should be included in your Legacy Modernization Charter. DIR sample referenced in Workshop #1.</p>
<p>DUE DILIGENCE</p> <p>Legacy: As-Is</p>		<p>Business Architecture (As-Is)</p>		
		<p>1. Business Model Canvas*</p>	<p>Provides high-level items-of-interest to be used in subsequent phases.</p>	<p>Identifies: Key Partners Key Activities; Key Resources; Value Propositions; Customer Relationships; Channels; Customer Segments; Cost Structure; Revenue Streams. See template in Appendix 6.14 of the LM Guide. Best created in a facilitated group session using sticky notes on a white-board canvas.</p>
		<p>2. Business Capabilities Analysis*</p>	<p>Defines the businesses' ability to produce outcomes and service levels that create customer value.</p>	<p>Use value stream information derived from the Business Model Canvas exercise, then identify business capabilities referencing the method described in Sections 3.3.2.1.7 and 3.3.2.1.8. See Capability Heat Map, example in Appendix 6.17.</p>
		<p>3. Business Process Analysis*</p>	<p>Describes how the business performs the given capability to deliver the desired outcome.</p>	<p>Use the results from the Business Capabilities analysis to identify the business processes that implement the business capabilities. See Sections 3.3.2.1.7 and 3.3.2.1.8 and Appendix 6.16 Value Stream Deconstruction example.</p>
		<p>4. Business Domain Model*</p>	<p>Identifies major business entities and their relationships consumed by business activities and actors.</p>	<p>Domain Models come in many forms, which vary on the balance between technical and organizational needs. Focus on the relationships of business partners and</p>

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DUE DILIGENCE				primary activities. See Process Analysis Section 3.3.2.1.8 and Business Domain defined elements and an example.	
		5. Use Case Model*	Provides a model for how different types of users interact with the system.	Identify the actors (i.e., user types and systems) and their interaction with the system being addressed. The use case model should be iteratively developed with the business owners to validate a common understanding of the functionality of an application (system).	
	Legacy: As-Is	6. Business Applications Portfolio Model	Identifies the business applications that support the business process.	DIR began providing an APM service as of 9/1/18. Formerly, agencies used their existing Applications Portfolio Management (APM) or pulled relevant information from the SPECTRIM security environment. Applications will be slotted into four categories: Eliminate; Tolerate; Integrate; or Migrate/Modernize.	
		7. Business Requirements*	Clearly document what the Business Application(s) does.	The ADDF provides detailed guidance for identifying appropriate solicitation methods .	
		8. Relationship Diagram between Value Chain, Business Capability, Business Process, and Business Application	Provides a multi-level, visual description of the entire system being addressed by the LM effort.	Perform a business process analysis using a Value Stream Deconstruction and a Business Services breakout as described in LM Guide Figure20, Business Capability Analysis diagram.	
		9. List of Pain Points*	Identifies sources of frustration or issues with an existing process or architecture.	Do not merely identify <i>symptoms</i> of a problem; identify what is to blame for the frustration or issue, i.e., the root cause and impact. What business value is being inhibited?	
		10. Wish List (if any)	Lists desired changes that have been expressed by stakeholders.	A process for prioritization is included within the Legacy Modernization Roadmap Section 3.3.4.4.	
		Data Architecture (As-Is)			
		1. Logical Data Model (LDM)*	Ensures that the system's data is reliable, correct, and useful.	Specify relationships among data entities and elaborate the attributes in each data entity.	
		2. Physical Data Model (PDM)*	Confirms an accurate understanding of how the data is physically structured in the DBMS(s). This will be especially significant if modernization requires transition to a different DBMS.	This will likely be reverse engineered from the current deployment.	
		3. Data Management Process Models	Describes the expected mechanisms for maintaining data. This may be in the form of a Master Data Management model, e.g., the <i>DAMA DMBOK Wheel</i> expressed linearly beginning with Data Governance.	Use the 10 elements within the DAMA DMBOK Wheel to identify the Data Management elements that are currently being addressed.	
		4. Mapping between LDM and PDM*	Identifies the path from a Logical Data Model and the Physical Data Model and ensure integrity.	Use commercially available entity mapping tools (e.g., ERwin, MS Visual Studio).	
	5. Mapping between LDM and Business Domain Model*	Identifies the entities in the LDM by their domain.	Use commercially available entity mapping tools (e.g., ERwin, MS Visual Studio).		

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DUE DILIGENCE		6. Data Entity and Business Function Mapping Matrix	Defines the relationships between entities and business functions.	Use commercially available entity mapping tools (e.g., ERwin, MS Visual Studio).	
		7. Data Entity and Application Mapping Matrix	Provides and understanding of which entities Applications depend on.	Use commercially available entity mapping tools (e.g., ERwin, MS Visual Studio) or a common spreadsheet tool.	
		8. Key Stakeholder Concerns about data (e.g., Data Life Cycle and Data Security Models)	Identifies areas for data improvement as expressed by a key stakeholder(s).	Use communication plans, RACI charts, etc. to communicate how these concerns are being addressed.	
		9. List of Pain Points*	Identifies sources of frustration or issues with an existing data architecture and/or a related process.	Do not merely identify <i>symptoms</i> of a problem; identify what is to blame for the frustration or issue, i.e., the root cause and impact. What business value is being inhibited?	
		10. Wish List (if any)	Lists any other desired changes that have been expressed by stakeholders.	A process for prioritization is included within the Legacy Modernization Roadmap Section 3.3.4.4.	
	Legacy: As-Is	Application Architecture (As-Is)			
		1. Functional & Non-Functional Capabilities of the Apps	Provides clarification of current application state.	Review documents, interview SME(s), and conduct focus group discussions as necessary.	
		2. Architecture of Each Major App*	Provides clarification of current application state.	Review documents, interview SME(s), and conduct focus group discussions as necessary.	
		3. Solution Architecture of Integrated Apps	Provides clarification of current application state.	Review documents, interview SME(s), and conduct focus group discussions as necessary.	
		4. Mapping Information Between Apps and Data*	Provides clarification of current application state.	Review documents, interview SME(s), and conduct focus group discussions as necessary.	
		5. Structure and Mapping of Interactions Among Business Process and Apps	Provides clarification of current application state.	Review documents, interview SME(s), and conduct focus group discussions as necessary.	
		6. List of Pain Points*	Identifies sources of frustration or issues with an existing applications architecture and/or a related process.	Do not merely identify <i>symptoms</i> of a problem; identify what is to blame for the frustration or issue, i.e., the root cause and impact. What business value is being inhibited?	
		7. Wish List (if any)	Lists desired changes that have been expressed by stakeholders.	A process for prioritization is included within the Legacy Modernization Roadmap Section 3.3.4.4.	
		Technology Architecture (As-Is)			
		1. Infrastructure Diagram*	Identifies enabling physical architecture, pain points, and duplication.	Leverage CMDB, network diagrams, and existing operational system diagrams. Discovery tools may be used to seed the content and relationships – they are typically costly and require significant planning and coordination with operations. Diagramming tools are readily available (e.g., MS Visio, SPARX EA).	
		2. Deployment Diagram*	Indicates the structural architecture of the system as deployment of software artifacts to deployment targets.	Leverage CMDB, network diagrams, and existing operational system diagrams. Discovery tools may be used to seed the content and relationships – however, they are typically costly and require significant planning	

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				and coordination with operations. Diagramming tools are readily available (e.g., MS Visio, SPARX EA).
		3. Technology and Product Standards	Identifies the current agreed upon standard deployment options.	Establish governance team(s) around the product types to address the value and need for technology components in the organization. Capture lifecycle information from manufacturers to perform roadmap planning.
		4. Networked Computing Hardware Diagram	Identifies enabling physical network to confirm supportability for modernized environment.	Leverage CMDB, network diagrams, and existing operational system diagrams. Discovery tools may be used to seed the content and relationships – they are typically costly and require significant planning and coordination with operations. Diagramming tools are readily available (e.g., MS Visio, SPARX EA).

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DUE DILIGENCE	Legacy: As-Is	5. Communications Engineering Diagram	The Communications Engineering diagram describes the means of communication between assets in the Technology Architecture <ul style="list-style-type: none"> • It takes logical connections between client and server components and identifies network boundaries and network infrastructure required to physically implement those connections. • It does not describe the information format or content but addresses protocol and capacity issues. 	Evaluate the network architecture, related firewall rules and network topology. Diagram using tools like MS Visio with standard high-level network objects, labeling the significant communication relationships with their protocol.
		6. Environments and Locations Diagram	Ensures awareness of physical environments and street <i>addresses</i> for planning.	Document as a catalog using sources like CMDB. Collect in tools like MS Word or Excel.
		7. Platform Decomposition Diagram*	Provides a high-level (level 0) overview of the enterprise's technology platform that supports the operations of the Information Systems Architecture.	Gather application components, logical technology components, physical application components, physical technology components, platform services, and technologies. Group in a nested boxes diagram.
		8. Functional & Non-Functional Capabilities of the Technical Architecture	Provides clarification of current technical state.	Review documents, interview SME(s), and conduct focus group discussions as necessary.
		9. Mapping Matrix of Technology and Applications Architecture	Provides clarification of current technical state.	Review documents, interview SME(s), and conduct focus group discussions as necessary.
		10. Mapping Matrix of Technology and Data Architecture	Provides clarification of current technical state.	Review documents, interview SME(s), and conduct focus group discussions as necessary.
		11. List of Pain Points*	Identifies sources of frustration or issues with an existing technology architecture and/or a related process.	Do not merely identify <i>symptoms</i> of a problem; identify what is to blame for the frustration or issue, i.e., the root cause and impact. What business value is being inhibited?
		12. Wish List (if any)	Lists desired changes that have been expressed by stakeholders.	A process for prioritization is included within the Legacy Modernization Roadmap Section 3.3.4.4.

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DUE DILIGENCE	Modern : To-Be	Business Architecture (To-Be)		
		1. Updated Business principles/goals/drivers*	Clearly establishes guiding factors for the target solution based on stakeholder's desired business outcomes.	Use the ADDF to engage with agency project sponsors and IT to capture business outcomes .
		2. Updated Business Architecture standards	Provides a current "operationalization" of the business strategy.	Ensure a common understanding of the relevant organization business strategy and its required goals and objectives. Establish this as the standard business architecture for all business architecture
		3. Updated Business organization and operation model*	Provides visibility into the organizations structure and how it operates. This will facilitate effective communication and approval process.	Review current organization charts and operations manuals. Update through discovery sessions with department heads, Human Resources, and operations teams.
		4. Updated Business Model Canvas*	Provides high-level items-of-interest to be used in subsequent phases.	Identifies: Key Partners Key Activities; Key Resources; Value Propositions; Customer Relationships; Channels; Customer Segments; Cost Structure; Revenue Streams. See template in Appendix 6.14 of the LM Guide. Best created in a facilitated group session using sticky notes on a white-board canvas.
		5. Updated Business Capability Model*	Defines the businesses' ability to produce outcomes and service levels that create customer value.	Use value stream information derived from the Business Model Canvas exercise, then identify business capabilities referencing the method described in Sections 3.3.2.1.7 and 3.3.2.1.8. See Capability Heat Map, example in Appendix 6.17.
		6. Updated Business Process Model*	Describes how the business performs the given capability to deliver the desired outcome.	Use the results from the Business Capabilities analysis to identify the business processes that implement the business capabilities. See Sections 3.3.2.1.7 and 3.3.2.1.8 and Appendix 6.16 Value Stream Deconstruction example.
		7. Updated Business Domain Model*	Identifies major business entities and their relationships consumed by business activities and actors.	Domain Models come in many forms, which vary on the balance between technical and organizational needs. Focus on the relationships of business partners and primary activities. See Process Analysis Section 3.3.2.1.8 and Business Domain defined elements and an example.
		8. Updated Roles and Responsibility Model*	Provides all stakeholders and supporting parties with a clear representation of roles and responsibilities.	Refer to examples in 3.2.4 of the LM Guide and steps for determining stakeholders and imperatives in the ADDF .
		9. Updated Use Case Model	Provides a model for how different types of users interact with the system.	Identify the actors (i.e., user types and systems) and their interaction with the system being addressed. The use case model should be iteratively developed with the business

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DUE DILIGENCE				owners to validate a common understanding of the functionality of an application (system).	
		10. Updated Business Application Portfolio Model*	Identifies the business applications that support the business process.	DIR began providing an APM service as of 9/1/18. Formerly, agencies used their existing Applications Portfolio Management (APM) or pulled relevant information from the SPECTRIM security environment. Applications will be slotted into four categories: Eliminate; Tolerate; Integrate; or Migrate/Modernize.	
		11. Updated Business Requirements	Clearly documents what the Business Application(s) needs to do.	The ADDF provides detailed guidance for identifying appropriate solicitation methods .	
		12. Updated Mapping or Matrix between Value Chain, Business Capability, Business Process and Business Application	Clearly documents what the Business Application(s) will do.	The ADDF provides detailed guidance for identifying appropriate solicitation methods .	
		13. Updated Mapping or Matrix of organization and business functions	Provides a multi-level, visual description of the entire system being addressed by the LM effort.	Perform a business process analysis of the business processes that create value and are related to the LM plan.	
		14. The list of pain points it addressed or left*	Clarifies which pain points the modernization will address, and which pain points it will not be addressing.		
		15. The wish list (if any) it addressed or left	Clarifies which wish list items the modernization will address, and which items it will not be addressing.		
		Data Architecture (To-Be)			
		1. Validated and updated data architecture principles and standards	Ensures forward looking approach for consistent and well-defined implementation.	It is useful to have a standard way of defining principles. In addition to a definition statement, each principle should have associated rationale and implications statements, both to promote understanding and acceptance of the principles themselves, and to support the use of the principles in explaining and justifying why specific decisions are made.	
		2. Data Architecture Standards or Pattern applied	Ensures there exists a record of the data architecture or data pattern that was applied. This can be used for reference in future changes.		
		3. Conceptual Data diagram*	Provides a simple view of the entities and relationships modeled around the business need.	Include noun and verb concepts as building blocks that can be used later for sentences (such as business rule statements). Use commercially available entity mapping tools (e.g., ERwin, MS Visual Studio).	
		4. Logical Data Model (LDM)*	Ensures that the system's data is reliable, correct, and useful.	Specify relationships among data entities and elaborate the attributes in each data entity.	

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	Modern: To-Be	5. Physical Data Model (PDM)*	Confirms an accurate understanding of how the data is to be physically structured in the DBMS(s).	Use commercially available entity mapping tools (e.g., ERwin, MS Visual Studio). Some tools support conversion from the LDM directly to the PDM.
		6. Data Dissemination diagram	Shows the relationship between data entities, business services, and application components. The diagram shows how the logical entities are to be physically realized by application components.	Use commercially available Enterprise Architecture tools (e.g., SPARX EA) or basic diagramming tools (MS Visio).
		7. Data Security diagram*	Depicts which actor (person, organization, or system) can access which enterprise data.	This relationship can be shown in a matrix form between two objects or can be shown as a mapping. The diagram can also be used to demonstrate compliance with data privacy laws and other applicable regulations (HIPAA, SOX, etc.). This diagram should also consider any trust implications where an enterprise's partners or other parties may have access to the company's systems, such as an outsourced situation where information may be managed by other people and may even be hosted in a different country.

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DUE DILIGENCE	Modern: To-Be	8. Data Migration diagram*	Shows the flow of data from the source to the target applications. The diagram will provide a visual representation of the spread of sources/targets and serve as a tool for data auditing and establishing traceability.	This diagram can be elaborated or enhanced as detailed as necessary. For example, the diagram can contain just an overall layout of migration landscape or could go into individual application metadata element level of detail.
		9. Data Lifecycle diagram*	Represents the management of business data throughout its lifecycle from conception until disposal within the constraints of the business process.	The data is considered as an entity in its own right, decoupled from business process and activity. Each change in state is represented on the diagram which may include the event or rules that trigger that change in state. The separation of data from process allows common data requirements to be identified which enables resource sharing to be achieved more effectively.
		10. Data Flow Diagram*	A view concerned with storage, retrieval, processing, archiving, and security of data. It provides an understanding of how to provide data to the right people and applications with the right interfaces at the right time.	It looks at the flow of data as it is stored and processed, and at what components will be required to support and manage both storage and processing. In general, these stakeholders are concerned with ensuring ubiquitous access to high quality data.
		11. Data management process models	Describes the expected mechanisms for maintaining data. This may be in the form of a Master Data Management model, e.g., the <i>DAMA DMBOK Wheel</i> expressed linearly beginning with Data Governance.	Use the 10 elements within the DAMA DMBOK Wheel to identify the Data Management elements that are to be addressed, for example: <ul style="list-style-type: none"> •Classify data elements (data classification) •Consider data access (data security) •Identify pertinent master data elements (MDEs) such as entity types, data elements, associations, and so on. •Define and manage metadata pertaining to MDEs, including: <ul style="list-style-type: none"> – Primary source(s) of record for MDEs – How systems access MDEs (identifying producers and consumers) – Volatility of MDEs – Lifecycles of MDEs – Value to your organization of individual MDEs – Owners and/or data stewards of MDEs •Adopt tools, including modeling tools and repositories, to manage MDM metadata
		12. Data Entity and Data Component catalog	Identifies and maintains a list of all the data used across the related environment, including data entities and the data components where data entities are stored.	Typically, a spreadsheet or database of the information.

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DUE DILIGENCE	Modern: To-Be	13. Data Entity and Business Function matrix	<p>Defines the relationships between data entities and business functions.</p> <ul style="list-style-type: none"> - Enables assignment of ownership of data entities to organizations - Understand the data and information exchange requirements business services - Support the gap analysis and determine whether any data entities are missing and need to be created - Define system of origin, system of record, and system of reference for data entities - Enables development of data governance programs across the enterprise (establish data steward, develop data standards pertinent to the business function, etc.) 		
		14. Constraints of the data architecture	Identifies limitations of the data architecture that will impact design and function.	Document in a Service Management Manual.	
		15. Functional and non-functional capabilities the data architecture provided	Provides clarification of expected state.		
		16. Mapping matrix of business and data architecture components	Provides clarification of expected state.		
		17. Mapping or matrix of the pain points addressed by the data architecture	Provides clarification of expected state.		
		18. Mapping or matrix of the wish list addressed by the data architecture	Provides clarification of expected state.		
		19. Updated business requirements (if appropriate)	Clearly documents what the Business needs are.	The ADDF provides detailed guidance for identifying appropriate solicitation methods .	
		20. Updated application requirements (if appropriate)	Clearly documents what the Application(s) needs to do.	The ADDF provides detailed guidance for identifying appropriate solicitation methods .	
		Application Architecture (To-Be)			
		1. Validated application architecture principles, or new principles	Ensures forward looking approach for consistent and well-defined implementation.		
		2. Architecture standards and patterns applied	Ensures there exists a record of the data architecture or data pattern to be applied. This can be used for reference in future changes.		
		3. Static structure diagram	Provides a visual view of the structural components that do not typically change.	For example: Architectural Overview; Component Diagram; and Class Diagram	
		4. Dynamic diagram	Provides a visual view of the components in the application that facilitate changing state.	For example: system process model, sequence diagram, interaction diagram	

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DUE DILIGENCE	Modern: To-Be	5. System integration diagram*	Visually describes the integration of various sub-systems of the Application, and/or how it integrates with external applications.	
		6. Applications interoperability model	Provides a model for the means to provide interoperability between the various interconnected applications.	
		7. Updated application portfolio model*	Identifies the business applications that support the business process.	DIR began providing an APM service as of 9/1/18. Until then, agencies should use their existing Applications Portfolio Management (APM) or pull relevant information from the SPECTRIM security environment. Applications will be slotted into four categories: Eliminate; Tolerate; Integrate; or Migrate/Modernize. (example)
		8. Interface catalog*	Maintains interface requirements	Document in an Application Portfolio Management solution. MS Word and MS Excel may be substituted.
		9. Application and user location diagram*	Provides a visual view of the Application relative to the location(s) of users. Provides awareness of network and communications needs.	
		10. Application Use-Case diagram	Provides prospective real-life uses for the application and identifies the actors and systems involved at a high-level.	
		11. Process/Application Realization diagram	<p>Clearly depicts the sequence of events when multiple applications are involved in executing a business process.</p> <p>It enhances the Application Communication diagram by augmenting it with any sequencing constraints, and hand-off points between batch and real-time processing.</p> <p>It identifies complex sequences that could be simplified and identifies possible rationalization points in the architecture in order to provide more timely information to business users. It may also identify process efficiency improvements that may reduce interaction traffic between applications.</p>	
		12. Application Migration diagram*	Identifies application migration from baseline to target application components. It enables a more accurate estimation of migration costs by showing precisely which applications and interfaces need to be mapped between migration stages.	

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			It would identify temporary applications, staging areas, and the infrastructure required to support migrations (for example, parallel run environments, etc.).	
		13. Constraints of the application architecture	Indicates limitations that must be accommodated in the future environment through technical or manually supported processes.	
		14. Functional and non-functional capabilities the application architecture provides	Provides a reference catalog of the expected capabilities during gap analysis, for design, and long-term.	
		15. Mapping matrix of business and application architecture components	Provides an easy to review layout of associations between business and application architecture components that allow business owners and developers to confirm requirements.	Mapping matrices could include Application and Organization; Role and Application; Application and Function

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DUE DILIGENCE	Modern: To-Be	Technology Architecture (To-Be)		
		1. Validated and updated technology principles and standards	Ensures forward looking approach for consistent and well-defined implementation.	
		2. Technology Components and their relationships to information systems	Provides aggregate view of the technology components with logically named grouping that can be used planning and evaluation sessions. Will also be used for cost allocation rollups.	DIR began providing an APM service as of 9/1/18. Until then, agencies should use their existing Applications Portfolio Management (APM) or pull relevant information from the SPECTRIM security environment or ITSM system.
		3. Technology platforms and their decomposition, showing the combinations of technology required to realize a particular technology "stack"	Provides grouping of technology stacks with logically named grouping that can be used planning and evaluation sessions. Will be used for cost allocation rollups, reuse, and standardization.	DIR began providing an APM service as of 9/1/18. Until then, agencies should use their existing Applications Portfolio Management (APM) or pull relevant information from the SPECTRIM security environment or ITSM system.
		4. Expected processing load and distribution of load across technology components	Ensures a method and mechanism to validate capacity requirements.	Excel spreadsheet with load and distribution by technology component.
		5. Hardware and network specifications, and physical (network) communications	Provides basis for communications requirements and ensures accurate planning and cost projections for to-be environment.	Excel spreadsheet or other tool effective at documenting a "list of materials".
		6. Infrastructure diagram*	Identifies enabling physical architecture, pain points, and duplication.	Diagramming tools are readily available (e.g., MS Visio, SPARX EA).
		7. Deployment diagram*	Indicates the structural architecture of the system as deployment of software artifacts to deployment targets.	Diagramming tools are readily available (e.g., MS Visio, SPARX EA).
		8. Networked Computing and Hardware diagram	Identifies enabling physical network to confirm supportability for modernized environment.	Leverage CMDB, network diagrams, and existing operational system diagrams. Discovery tools may be used to seed the content and relationships – they are typically costly and require significant planning and coordination with operations. Diagramming tools are readily available (e.g., MS Visio, SPARX EA).
		9. Communications Engineering diagram	The Communications Engineering diagram describes the means of communication between assets in the Technology Architecture <ul style="list-style-type: none"> • It takes logical connections between client and server components and identifies network boundaries and network infrastructure required to physically implement those connections. • It does not describe the information format or content but addresses protocol and capacity issues. 	Describe the network architecture, related firewall rules and network topology. Diagram using tools like MS Visio with standard high-level network objects, labeling the significant communication relationships with their protocol.
10. Environments and Locations diagram	Ensures awareness of target physical environments and addresses for planning.	Document as a catalog in tools like MS Word or Excel.		

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DUE DILIGENCE	Modern: To-Be	11. Platform Decomposition diagram*	Provides a high-level (level 0) overview of the enterprise's technology platform that support the operations of the Information Systems Architecture.	Describe application components, logical technology components, physical application components, physical technology components, platform services, and technologies. Group in a nested boxes diagram.
		12. The functional and non-functional capabilities the technology architecture provided	Provides clarification of target technical state.	Review documents, interview SME(s), and conduct focus group discussions as necessary.
		13. The mapping matrix of technology and business architecture	Provides clarification of target technical state.	Review documents, interview SME(s), and conduct focus group discussions as necessary.
		14. The mapping matrix of technology and data architecture	Provides clarification of target technical state.	Review documents, interview SME(s), and conduct focus group discussions as necessary.
		15. The mapping matrix of technology and application architecture	Provides clarification of target technical state.	Review documents, interview SME(s), and conduct focus group discussions as necessary.
		16. The mapping or matrix of the pain points addressed by To-Be Technology Architecture*	Identifies clearly the issues the target technical state is expected to address.	Create a table matrix (e.g., Excel or Word) mapping technology solution to pain point.
		17. The mapping or matrix of the wish list (if any) addressed by To-Be Technology Architecture	Identifies clearly the wish-list items that target technical state could address.	Create a table matrix (e.g., Excel or Word) mapping technology solution to wish-list item.

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DUE DILIGENCE	Strategic Planning	Revised Goal/Expectations*	LM goal and expectations may have changed following the As-Is and To-Be analysis.	Review the LM Charter and determine whether conducting the As-Is and To-be analysis has in some way changed the initially stated vision, goals, scope, or other modernization expectations.
		Gap and Opportunity Analysis*	Identifies the gaps and opportunities between As-Is and To-Be architectures and supplies recommendations for bridging the gaps.	Refer to Section 3.3.4.3.2 Approaches for how to create a matrix like example Figure 24. Create a summary or list of identified gaps and opportunities.
		Impact Analysis*	Identifies architectures, programs, and projects that could be impacted by the modernization and what the impacts or risks would be.	Refer to Section 3.3.4.2.3 Approach for list of questions to be answered. A matrix (Figure 23 from the Guide) can be used to show the impact each To-Be architecture could have on each pre-existing architecture. Identify potential impact of other projects on concurrent timeline schedules. Also see Use Case examples in Section 5.5.1.
		Legacy Modernization Roadmap*	The Roadmap will be a key input for the Planning & Funding stage. It presents a chronological view of changes over the Legacy Modernization timeline, organized by the prioritized work packages, epics, or stories. The roadmap will show where you are today and where you are planning to go to achieve the desired business outcomes.	The level of detail will be dependent on scope and goals. At minimum, the Roadmap should highlight the work packages, the phases associated with work packages and the benefits to be attained, and the architectural changes that will be made during each phase. Refer to Section 3.3.4.4. Also see Use Case examples in Section 5.5.3.
		Initial Implementation & Migration Plan*	Communicates how the modernization will transition into operation based on the input from the Impact Analysis, Gap & Opportunity Analysis, and Roadmap.	Refer to Section 3.3.4.5 and to Figure 24 (Use Case) example in Section 5.5.4 for how this information can be presented.

Title: Legacy Modernization Artifact Checklist



LM Stage	Phase	Artifact	Artifact Purpose	Tips for Creating Artifact
PLANNING & FUNDING	Modernization Planning	Context Diagram*	A one-page, big-picture overview of the system project, its domain, its work packages, and how the associated people roles and other systems interact with the system.	The intent is to make a diagram that can be easily understood by all stakeholders. It should show the entire scope of the project without being too complex or abstract.
		Project Business Case*	Provides the rationale and ROI for funding and executing the Transformation and Production stages of a Legacy Modernization project.	The outputs developed during the Due Diligence stage of the Legacy Modernization will supply the information required to build the Business Case. The Business Case format used will depend on whether the project meets the criteria for a "major" IT project (Project Framework).
		Project Charter*	Following internal-agency approval of the Business Case, relevant elements of the LM Charter for the Due Diligence stage are carried-over to create one or more project charters representing the Transformation and Production stages or each modernization project.	Some agencies will have their own Project Charter template. DIR also supplies a Project Charter template. Also, some agencies might defer creating their project charter until after the agency has been notified that the project funding has been secured.
	Funding and Contract	Project Framework Projects	A DIR-supplied toolset designed to improve the likelihood that a "major" IT project will deliver a quality solution.	Only projects determined to be a "major" IT project will be required to use DIR's Project Framework. The outputs developed during the Due Diligence stage of the Legacy Modernization will supply a significant amount of the content needed to complete the Project Framework and support the agency's justification for funding.
		Non-Framework Projects	Project toolsets that are an agency-specific best practice.	Tools and processes used for funding, initiating, and managing projects will normally be agency-specific for a project that does not meet the criteria of a "major" IT project. If needed, DIR supplies a PM Lite process.